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EXAMINER

ABEBE, DANIEL DEMELASH

ART UNIT

PAPER NUMBER

2626

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DELIVERY MODE

12/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/796,921

**Applicant(s)**

HWANG, MEI-YUH

**Examiner**

Daniel D. Abebe

**Art Unit**

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-27 is/are allowed.
- 6) ☒ Claim(s) 1, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman et al. (6,263,308) in view of applicant's admission.

As to claim 1, Heckerman teaches a computer (Figs.2, 9) readable storage medium having instruction to perform the steps comprising;

Generating a speech based phonetic description (1514) of a word by decoding a speech signal representing the user's pronunciation;

Generating a text based phonetic description (1510) of the word based on the text of the word;

Aligning (1515) the speech based phonetic description (1514) and the text based phonetic description (1510) on a phone by phone basis and selecting a phonetic description ( Figs.5-7; Col.13, line 55-Col.15, line 30)

According to Heckerman a method is disclosed to adapt the acoustic model for new word to the user pronunciation using text based and speech based phonetic transcribers wherein the text based phonetic transcriber receives text corresponding to each correctly recognized word and generates phonetic transcriptions of the word.

And on the other hand, the speech based phonetic recognizer processes the word and generates there from phonetic representation for the word. **The phonetic**

**representation selector compares the phonetic representation generated from the audio corresponding to each word to the phonetic representation of the word produced by the text phonetic transcriber and selects one with reasonable match between** the phonetic representation generated from the audio and the phonetic representations of the word generated from the transcriber where the output is selected to be the phonetic representation that is supplied to the acoustic model trainer as training data (Fig.9).

It is noted that Heckerman doesn't explicitly teach wherein the recognition of the speech signal comprises identifying a sequence of syllable like units from the speech signal, however this process is admitted as to be performed by the conventional system in the background on page 2, lines 21-33, and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine this process with Heckerman's teaching for the purpose of providing an alternative unit of speech that can be used to obtain the phonetic description for the speech signal.

As to claim 7, generating the text phonetic description using letter to sound is admitted to be performed by the conventional system (Page 2, lines 5-30).

As to claim 8, Heckerman teaches where speech samples are compared to acoustic model to generate the phonetic transcription (Col.14, lines 32-45)

***Allowable Subject Matter***

Claims 9-27 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: with regard to claim 9, the prior arts of record do not teach selecting a phonetic

pronunciation from a search structure where the phonetic pronunciation comprises phonetic units of the speech based phonetic sequence that differ from phonetic units of the text based phonetic sequence and phonetic units other than phonetic units of the speech based phonetic sequence. Claims 10-18 depend on claim 9 and are allowable accordingly.

With regard to claim 19, the prior arts of record do not teach generating the acoustic description of the word based on the selected sequence of paths wherein the acoustic description comprises a phonetic unit found in the speech based phonetic description but not in the text based phonetic description and a second phonetic unit found in the text based phonetic description but not in the speech based phonetic description. Claims 20-27 depend on claim 19 and are allowable.

Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims are allowable, because the prior arts of record alone or in combination do not teach generating syllable like units using mutual information before decoding a speech signal as recited in the claims.

#### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. The indicated allowability of claim 4 which is incorporated in

claim 1 has been withdrawn after further consideration of the applicant's admission in the background.

The rejection under USC 101 has been withdrawn as the result of applicant's amendment limiting the computer readable medium to the statutory storage medium as described in the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Daniel D Abebe/  
Primary Examiner, Art Unit 2626